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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,624	07/25/2001	Kazuya Asano	1095.1189	3454

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EXAMINER

TAYLOR, NICHOLAS R

ART UNIT PAPER NUMBER

2141

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/911,624	Applicant(s) ASANO ET AL.	
	Examiner Nicholas R Taylor	Art Unit 2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-11 have been examined and are rejected.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman et al. (US Patent 5,309,437) and Plummer (RFC 826.)

5. As per claim 1, Perlman teaches a packet transmission system comprising:

at least one first host apparatus belonging to a first host group; at least one second host apparatus belonging to a second host group; and a router which transfers packets between said first at least one host apparatus and said second at least one host apparatus; (Perlman, column 8, Lines 1-9)

a first transmission unit which transmits said packet in which said IP address and said link-layer address are inserted; (Perlman, column 8, lines 1-20, where transmission from a source is inherent in a network)

said router comprises, a port determination unit which determines a port connected to said at least one second host apparatus in said second host group based on said IP address inserted in said packet transmitted by said first transmission unit, and a second transmission unit which transmits said packet from said port determined by said port determination unit (Perlman, column 11, lines 50-70, and Fig 4.)

However, Perlman fails to specifically teach wherein each of said at least one first host apparatus in said first host group comprises an insertion unit which inserts in a packet an IP address and a link-layer address of a destination host apparatus of the packet, where said destination host apparatus belongs to said second host group. Plummer teaches the standard of inserting an IP address and a link-layer address in a data packet before transferring data from a host to a destination (Plummer, "Packet Format" section.) It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Perlman and Plummer to provide IP and link-layer addresses in the system of Perlman, because doing so would allow ARP protocol resolution necessary for an ethernet system to function. This is stated as referenced in the art (Plummer, Abstract.)

6. As per claim 2, Perlman further teaches a packet transmission system wherein each of said at least one first host apparatus in said first host group further comprises a

unit which determines whether or not said destination host apparatus belongs to a subnetwork at a first predetermined level in a network hierarchy, based on said IP address of the destination host apparatus and a first subnet mask (Perlman, column 11, lines 50-70, and Fig 4.)

7. As per claim 3, Perlman further teaches a packet transmission system wherein said router further comprises a unit which determines a subnet address of a subnetwork at a second predetermined level in a network hierarchy to which said destination host apparatus belongs, based on said IP address of the destination host apparatus and a second subnet mask (Perlman, column 11, lines 50-70, and Fig 4.)

8. As per claim 4, Perlman teaches a packet transmission system comprising:
a plurality of host apparatuses; and at least one router which transfers packets between said plurality of host apparatuses; (Perlman, column 8, Lines 1-9)

each of said plurality of host apparatuses comprises, a first storage unit which stores IP addresses of host apparatuses belonging to a first subnetwork at a first predetermined level in a network hierarchy and link-layer addresses corresponding to the IP addresses, a first determination unit which determines whether or not a destination host apparatus of a packet belongs to said first subnetwork, a link-layer address acquisition unit which acquires from said first storage unit a link-layer address of said destination host apparatus based on an IP address of said destination host apparatus when said first determination unit determines that said destination host

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apparatus belongs to said first subnetwork, a first transmission unit which transmits said packet in which said destination IP address and said destination link-layer address are inserted; (Perlman, column 7, lines 57-70, wherein an ARP cache storage and usage in the host device is inherent in the use of the TCP/IP and ARP protocols)

each of said at least one router comprises, a plurality of ports each of which is connected to at least one host apparatus, a second storage unit which stores a plurality of identifiers of said plurality of ports and a plurality of subnet addresses of a plurality of second subnetworks at a second predetermined level in a network hierarchy corresponding to the plurality of ports, (Perlman, column 11, lines 50-70, and Fig 4.)

a reception unit which receives a packet transmitted from a source host, a destination-IP-address extraction unit which extracts a destination IP address from said packet received by said reception unit, a second determination unit which determines one of said plurality of subnet addresses of said plurality of second subnetworks to which said destination IP address extracted by said destination-IP-address extraction unit corresponds, a third determination unit which determines one of said plurality of ports corresponding to said one of said plurality of subnet addresses determined by said second determination unit, by referring to said second storage unit, and a second transmission unit which transmits said packet received by said reception unit, from said one of said plurality of ports determined by said third determination unit (Perlman, column 11, lines 50-70, and Fig 4.)

However, Perlman fails to specifically teach an insertion unit, which inserts in said packet said IP address of said destination host apparatus as a destination IP

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address and said link-layer address of said destination host apparatus as a destination link-layer address. Plummer teaches the standard of inserting an IP address and a link-layer address in a data packet before transferring data from a host to a destination (Plummer, "Packet Format" section.) It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Perlman and Plummer to provide IP and link-layer addresses in the system of Perlman, because doing so would allow ARP protocol resolution necessary for an ethernet system to function. This is stated as referenced in the art (Plummer, Abstract.)

9. As per claim 5, Perlman further teaches a packet transmission system wherein said link-layer address is a MAC (Media Access Control) address (Perlman, column 7, lines 57-70, wherein MAC address usage is inherent in TCP/IP.)

10. As per claim 6, Perlman further teaches a packet transmission system wherein said first determination unit uses a first subnet mask in order to determine whether or not said destination host apparatus of said packet belongs to said first subnetwork, said second determination unit uses a second subnet mask in order to determine one of said plurality of subnet addresses of said plurality of second subnetworks to which said destination IP address extracted by said destination-IP-address extraction unit corresponds, and the first and second subnet masks have different lengths (Perlman, column 11, lines 50-70, and Fig 4, wherein different subnets have masks of any lengths.)

11. As per claim 7, Perlman further teaches a packet transmission system wherein each of said at least one router comprises a discard unit which discards said packet received by said reception unit, as necessary (Perlman, column 11, lines 57-60.)

12. As per claims 8 and 9, Perlman teaches a system for transmitting a packet to a destination, comprising:

a storage unit which stores IP addresses of hosts belonging to a subnetwork at a predetermined level in a network hierarchy and link-layer addresses corresponding to the IP addresses; a determination unit which determines whether or not said destination host belongs to said subnetwork; a link-layer address acquisition unit which acquires from said storage unit a link-layer address of said destination host apparatus based on an IP address of said destination host apparatus when said determination unit determines that said destination host apparatus belongs to said subnetwork; (Perlman, column 7, lines 57-70, wherein an ARP cache storage and usage in the host device is inherent in the use of the TCP/IP and ARP protocols.)

However, Perlman fails to specifically teach an insertion unit, which inserts in said packet said IP address of said destination host apparatus as a destination IP address and said link-layer address of said destination host as a destination link-layer address and a transmission unit which transmits said packet in which said destination IP address and said destination link-layer address are inserted. Plummer teaches the standard of inserting an IP address and a link-layer address in a data packet before

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transferring data from a host to a destination (Plummer, "Packet Format" section.) It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Perlman and Plummer to provide IP and link-layer addresses in the system of Perlman, because doing so would allow ARP protocol resolution necessary for an ethernet system to function. This is stated as referenced in the art (Plummer, Abstract.)

13. As per claims 10 and 11, Perlman teaches a device for transferring a packet between a plurality of hosts, comprising:

a plurality of ports each of which is connected to at least one host; a storage unit which stores a plurality of identifiers of said plurality of ports and a plurality of subnet addresses of a plurality of subnetworks at a predetermined level in a network hierarchy corresponding to the plurality of ports; (Perlman, column 11, lines 50-70, and Fig 4, specifically the IP database)

a reception unit which receives a packet transmitted from a source host; a destination-IP-address extraction unit which extracts a destination IP address from said packet received by said reception unit; a subnet-address determination unit which determines one of said plurality of subnet addresses of said plurality of subnetworks to which said destination IP address extracted by said destination-IP-address extraction unit corresponds; a port determination unit which determines one of said plurality of ports corresponding to said one of said plurality of subnet addresses determined by said subnet-address determination unit, by referring to said storage unit; and a transmission

unit which transmits said packet received by said reception unit, from said one of said plurality of ports determined by said port determination unit (Perlman, column 11, lines 50-70, and Fig 4.)

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes US Patents 6,603,769, 6,745,243, and 6,778,540.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas R Taylor whose telephone number is (571) 272-3889. The examiner can normally be reached on Monday-Friday, 8:00am to 5:30pm, with alternating Fridays off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3718.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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